

Appl. No. 10/710,023
Amdt. Dated August 1, 2005
Reply to Office Action of 5/10/2005

REMARKS

Claims 1-20 are currently pending and rejected by the Office. Claims 1-3, 5-7, 9, and 17-18 are herein amended.

Claims Rejections - 35 USC §112 Second Paragraph

The Office rejected Claims 1-8 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the applicant regards as the invention. A §112 second paragraph rejection has two separate requirements, indefiniteness and failing to claim what applicant regards as the invention. With respect to indefiniteness, the "essential inquiry pertaining to this requirement is whether the claims set out and circumscribe a particular subject matter with a reasonable degree of clarity and particularity. Definiteness of claim language must be analyzed, not in a vacuum, but in light of (1) the content of the particular disclosure, (2) the teachings of the prior art, and (3) the claim interpretation that would be given by one possessing the ordinary level of skill in the pertinent art at the time the invention was made." (MPEP §2173.02).

The Office Action stated that the definition of "open area" is unclear as recited in claims 1 and 2. The "open area" in the present application means a developed resist pattern, so that the Applicant now amends "open area" to "developed area" in the independent claim 1 and the accompanying dependent claims to clarify the definition.

The Office Action stated that claim 7 contains the trade name SU-8, which is not the goods themselves. The Applicant has amended claim 7 to identify the claimed particular material pertaining to SU-8 series resists which are well known to those skilled in the art. The product names are derivatives of SU-8 such as SU-8 50 to designate a particular product name. Material data sheets are publicly available with the particulars of the organic resin solution SU-8 resists.

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Claims Rejections - 35 USC §102

The Office rejected claims 1, 7 and 8 under 35 U.S.C. 102(b) as being anticipated by Liao (US 4,767,721). The Office also rejected claims 1-5 and 9-20 under 35 U.S.C. 102(e) as being anticipated by Behfar (US 6,653,244). A rejection based on anticipation requires that a single reference teach every element of the claim (MPEP § 2131). "The identical invention must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). Or stated in another way, a "claim is anticipated only if each and every element as set forth in the claim is found, . . . described in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).

The Applicant traverses these rejections. In addition, the Applicant has amended the claims to more distinctly define the claimed invention. Liao teaches a two-layer photoresist lift-off system employing two separate layers of photoresist material. The Examiner states that layer 35b is a barrier layer. As described in Liao, layer 35b is a PMMA photoresist layer, as is 35a. Liao describes that the combined layers 35a and 35 are exposed by deep UV radiation (Col 4, lines 31-36). Liao does not disclose or suggest an opaque barrier layer or the structure of the present invention as recited in Claim 1.

In distinction, the barrier layer of the amended claims is an 'opaque layer' used to prevent intermixing and to stop the radiation from penetrating the lower layer, as detailed in the present specification. The Applicant has amended the independent claim 1 and the related dependent claims to include this feature. Since this claimed feature cannot be found in Liao, Liao fails to disclose each and every element of the presently amended claims. Reconsideration and allowance of the rejected claims 1, 7 and 8 is therefore respectfully requested.

As described in Behfar, some type of barrier layer is disclosed between the photoresist layers 14 and 30, and the barrier film is used to prevent the second photoresist layer 30 from intermixing or dissolving the photoresist layer 14 (col. 3, line 25-29 and col. 6, line 37-41). In the

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EXAMPLE (see Col 6, starting at line 34), a barrier layer is employed to prevent the dissolving of layer 14. Thus, Behfar discloses an interlayer to prevent different resist layers from chemically intermixing. More specifically, in Behfar Col 2, line 5, "[i]f desired a barrier layer may be provided between successive layers to prevent intermixing."

Thus, Behfar does not disclose or suggest using an opaque barrier layer to prevent radiation from penetrating lower layers nor does Behfar describe the structure created by Behfar. Furthermore, the method used in Behfar for exposing two photoresist layers is related to controlling the exposure time (col. 3, line 34-36) to limit the amount of radiation to the underlying layer. More specifically as stated in Behfar Col 3, line 35, "[i]t should be noted that the exposure time is selected to be just sufficient to penetrate the second photoresist layer 30 but insufficient to penetrate the first photoresist layer 14."

This timed exposure approach is entirely different from the method claimed in the present application. With a barrier layer there is no concern about exposure time of the first layer because the barrier layer precludes exposure. Behfar does not teach an opaque barrier layer because it is not intended to solve the problems outlined in the present application. The Applicant has amended independent claims 1, 9 and 18 and the related dependent claims to include this feature. Since this claimed feature cannot be found in Behfar, and Behfar fails to disclose every element of the claims. Reconsideration and allowance of the rejection of claims 1-5 and 9-20 is therefore respectfully requested.

Claim Rejections – 35 USC § 103

The Office rejected claims 7 and 8 as being unpatentable over Behfar as applied to claim 1 above, and further in view of Sherrer (US 6,811,853). The Applicant has carefully reviewed the cited references and respectfully disagrees.

The Sherrer reference alone or in combination with Behfar never discloses or suggests using an "opaque barrier layer" or the structure therein, which is claimed in the amended Claim

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1. Nor is there any motivation or suggestion to employ the teachings of the present invention. Therefore, the amended independent claim 1 is non-obvious.

According to the MPEP 2143.03, *an independent claim is non-obvious under 35 U.S.C.103, then any claim depending therefrom is non-obvious.* Claims 7 and 8 are dependent on claim 1 and should be allowed if claim 1 is non-obvious. Reconsideration of the rejection of all claims is therefore respectfully requested.

Telephone Interview

Present Office policy places great emphasis on telephone interviews initiated by the examiner. For this reason, it is not necessary for an attorney to request a telephone interview. Examiners are not required to note or acknowledge requests for telephone calls or state reasons why such proposed telephone interviews would not be considered effective to advance prosecution. However, it is desirable for an attorney to call the examiner if the attorney feels the call will be beneficial to advance prosecution of the application. MPEP§408

Applicant believes the above amendments and remarks to be fully responsive to the Office Action, thereby placing this application in condition for allowance. No new matter is added. Applicant requests speedy reconsideration, and further requests that Examiner contact its attorney by telephone, facsimile, or email for quickest resolution, if there are any remaining issues.

Respectfully submitted,



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